Addition and Subtraction of Algebraic Expression

⇨ Addition

The basic principle of addition is that we can add like terms only. Unlike terms cannot be added. So, to add two or more algebraic expression, we collect different groups of like terms and add the coefficients of the like terms in each group. To do so, we can follow two methods:

(i) Horizontal method (ii) Column method

⇨ Horizontal Method: In this method of addition, we arrange all the terms in a horizontal line and then we add by combining the like terms.

Let us understand with an Example:

Example: Find the sum of $10x, 5x, -4x \; and \; 3x$

Solution: $10x + 5x - 4x + 3x = 14x$

⇨ Column Method: In this method, we write the like terms in columns and then add them.

Let us understand with an Example:

Example: Add (6a + b), (5a – 2b), and (-3a – b + c).

Solution:

$$\begin{array}{r} 6a + b \\ 5a - 2b \\ -3a - b + c \\ \hline 8a - 2b + c \end{array}$$

Addition and Subtraction of Algebraic Expression

⇨ Subtraction

Like addition, subtraction is also possible between two like terms only. When we subtract a number from another number, we add the additive inverse of the second number to the earlier number.

Let us understand with an Example:

Example: Subtract 5a – 3b from -8a + 7b

Solution: (-8a + 7b) – (5a – 3b) = (-8a + 7b) + (-5a + 3b)

= (-8a – 5a) + (7b + 3b)

= -13a + 10b